

WHAT IS CLAIM IS

1. Source-antenna for transmitting/receiving electromagnetic waves comprising an array of n radiating elements operating in a first
5 frequency band, an element with longitudinal radiation operating in a second frequency band and situated at the centre of the array, the array of n radiating elements and the element with longitudinal radiation having a substantially common phase centre, the n radiating elements being arranged symmetrically about the longitudinal-radiation element, wherein
10 each element of the array consists of a radiating element of the travelling wave type.
2. Source-antenna according to Claim 1, characterized in that the radiating element of the travelling wave type is a helical device.
3. Source-antenna according to Claim 2, characterized in that
15 the length of the helical device is calculated in such a way that the radiation pattern of the array is substantially identical to the radiation pattern of the said helical device.
4. Source-antenna according to Claim 2, characterized in that the helical devices are arranged so as to form a sequential-rotation array.
- 20 5. Source-antenna according to Claim 1, characterized in that the array of n radiating elements is excited by a feed array of printed type.
6. Source-antenna according to Claim 1, characterized in that n is equal to 4.
7. Source-antenna according to Claim 1, characterized in that n
25 is equal to 8.
8. Source-antenna according to Claim 1, characterized in that the longitudinal-radiation element comprises a longitudinal-radiation dielectric rod with axis coinciding with the axis of radiation.
9. Source-antenna according to Claim 1, characterized in that
30 the longitudinal-radiation element comprises a helical device with axis coinciding with the axis of radiation.
10. Source-antenna according to Claim 7, characterized in that the longitudinal-radiation element is excited by means comprising a waveguide.

11. Source-antenna according to Claim 8, characterized in that the longitudinal-radiation element is excited by means comprising a waveguide.

12. Source-antenna according to Claims 1, characterized in that one of the two frequency bands is used for the reception of electromagnetic waves whilst the other frequency band is used for the transmission of electromagnetic waves.